

IN THE CLAIMS

Subcl 7  
1-4. (Canceled)

5. (Currently Amended) An OFDM (Orthogonal Frequency Division Multiplexing) receiver, adapted to be synchronized by means of a received broadcast burst preamble,

Synchronization preamble structure according to claim 2, characterized in that wherein

- the preamble comprises at least one first part (A-FIELD) and at least one second part (B-FIELD),

- said at least one first part (A-FIELD) being designed for a coarse frame detection and/or an AGC control,

- said at least one second part (B-FIELD) following the at least one first part in the time domain and being designed for a timing and frequency synchronization,

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- the at least one first part (A-FIELD) and the at least one second part (B-FIELD) containing Inverse Fourier Transformed (IFT) frequency domain sequences of complex symbols,

- the frequency domain sequence of the at least one first part (A-FIELD) is  $S_A = (1-i), (1+i), (-1+i), (-1-i), (1-i), (-1-i), (1-i), (-1-i), (1-i), (-1-i), (1+i), (1+i)$ , and set depending on the frequency domain sequence of the at least one second part (B-FIELD) is  $S_B = (1+i), (-1+i), (-1-i), (1-i), (-1-i), (1-i), (1-i), (-1-i), (1-i), (-1-i), (1+i), (1+i)$  such that a second autocorrelation peak mainly generated by the at least one second part (B-FIELD) of the preamble is optimized, and the sequence of complex symbols of the first part differs from the sequence of complex symbols of the second part in at least one symbol.

6-9. (Canceled).

10. (Currently Amended) A method for the synchronization of a receiver of a OFDM transmission by means of a broadcast burst preamble, Method according to claim 8, characterized in that the time domain signal of the synchronization preamble is generated by mapping frequency domain sequences of 12 complex symbols to a 64 point IFFT, wherein the remaining inputs of the IFFT are set to zero, the first complex symbols of the sequence of the at least one first part being respectively different to the first six complex symbols of the sequence of the at least one second part wherein

- the preamble comprises at least one first part (A-FIELD) and at least one second part (B-FIELD,

- said at least one first part (A-FIELD) being designed for a coarse frame detection and/or an AGC control,

- said at least one second part (B-FIELD) following the at least one first part in the time domain and being designed for a timing and frequency synchronization,

- the at least one first part (A-FIELD) and the at least one second part (B-FIELD) containing Inverse Fourier Transformed (IFT) frequency domain sequences of complex symbols,

- the frequency domain sequence of the at least one first part (A-FIELD) is set depending on the frequency domain sequence of the at least one second part (B-FIELD) such that a second autocorrelation peak mainly generated by the at least one second part (B-FIELD) of the preamble is optimized, and

the sequence of complex symbols of the first part differs from the sequence of complex symbols of the second part in at least one symbol.

11. (Canceled)

12. (New) An OFDM transmitter, designed for generating and transmitting a broadcast burst preamble, wherein

- the preamble comprises at least one first part (A-FIELD) and at least one second part (B-FIELD),
  - said at least one first part (A-FIELD) being designed for a coarse frame detection and/or an AGC control,
  - said at least one second part (B-FIELD) following the at least one first part in the time domain and being designed for a timing and frequency synchronization,
  - the at least one first part (A-FIELD) the at least one second part (B-FIELD) containing Inverse Fourier Transformed (IFT) frequency domain sequences of complex symbols,
  - the frequency domain sequence of the at least one first part (A-FIELD) is set depending on the frequency domain sequence of the at least one second part (B-FIELD) such that a second autocorrelation peak mainly generated by the at least one second part (B-FIELD) of the preamble is optimized, and
- the sequence of complex symbols of the first part differs from the sequence of complex symbols of the second part in at least one symbol.

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